

A new species of the genus *Ourapteryx* Leach, 1814 from central China (Lepidoptera : Geometridae, Ennominae)

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Abstract *Ourapteryx puncticulosa* sp. n. is described from central China. The new species exhibits a number of characters now very common in this genus. Most of them are presumably plesiomorphic and the new species is therefore considered to be the most primitive taxon within the genus *Ourapteryx* Leach presently known.

Key words Geometridae, Ennominae, *Ourapteryx* Leach, *Ourapteryx puncticulosa* sp. n., wing shape, antennae, genitalia, plesiomorphic characters, central China.

Introduction

In contrast to the rather well-known fauna of Taiwan, consisting of a total of 15 *Ourapteryx*-species (Inoue, 1985), the fauna of continental China of this genus has not yet been revised completely. A total of about 30 species is expected to occur there, many of them being not yet described. A revision of the Chinese *Ourapteryx*, based on the rich material of the Höne-collection (ZFMK) and the collection of the senior author (already donated to the BMNH), is being presently prepared by the authors, but a very remarkable new taxon will be presented here in advance.

Abbreviations : BMNH—The Natural History Museum, London ; ZFMK—Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn.

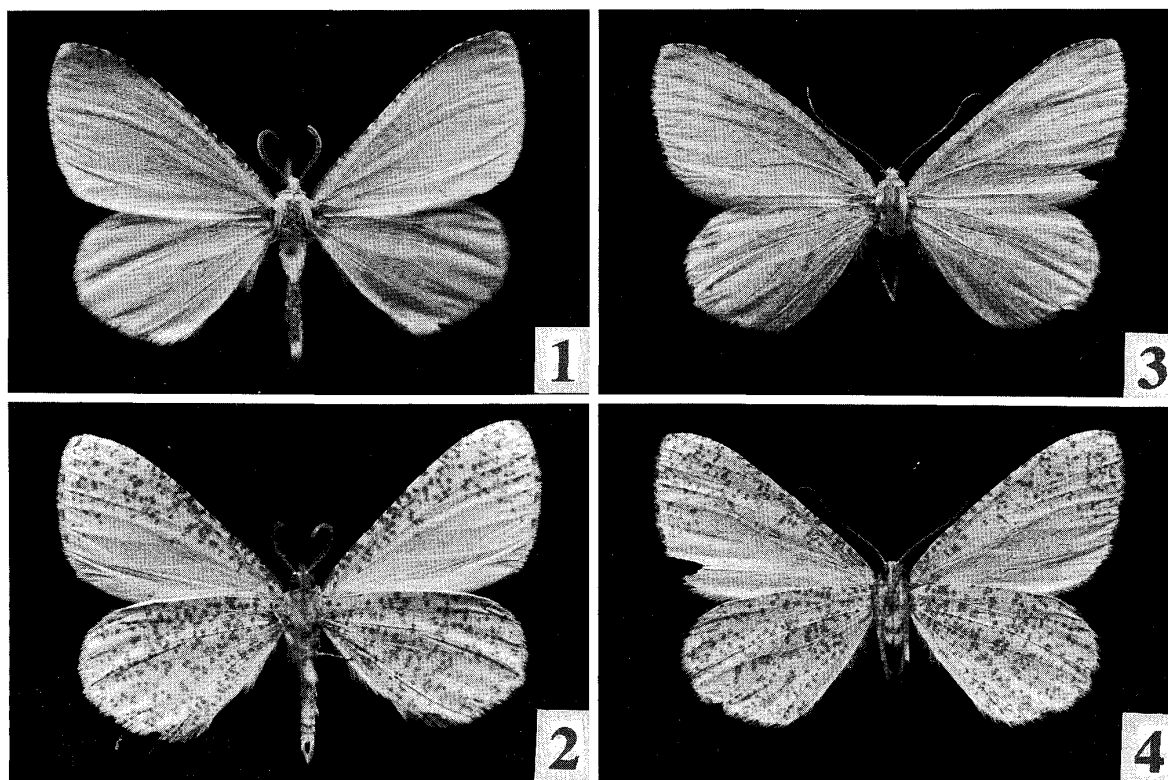
Description

Ourapteryx puncticulosa sp. n. (Figs 1-4)

A small species. Length of forewing : ♂ ♀ 17-18 mm. Antenna shortly bipectinate in male (Fig. 7), pectinations dilated apically, arising proximally from the flagellum segments, maximum length about four times the diameter of the latter, the apical eight to nine segments simple. Antenna filiform in female. Face, palps, thorax and abdomen white, weakly tinged with yellow. Forewing with apex rounded, termen weakly curved, oblique ; hindwing with termen rounded, only very slightly angled at M_3 . Veins R_1 and R_2 coincident, shortly anastomosing with Sc and the common stem of R_3 and R_4 .

Upperside of both wings white, without transverse lines, forewing with costal and apical area faintly yellowish, costa speckled with grey-brown. The dark spot-like maculation of the underside faintly shining through on both wings. Fringe of forewing whitish, weakly and partly spotted with grey-brown at intervals of veins. On underside, forewing white at basal and posterior area below cell and CuA_1 , remaining area pale yellow, heavily spotted with fuscous, fringe more clearly speckled than on upperside. Hindwing yellowish, densely spotted with fuscous throughout.

Hindtibia not dilated, without scent-pencil, accordingly the setal comb of abdominal sternite 3 absent, stero-tympanal process as well. Tympanic lacinia well developed.



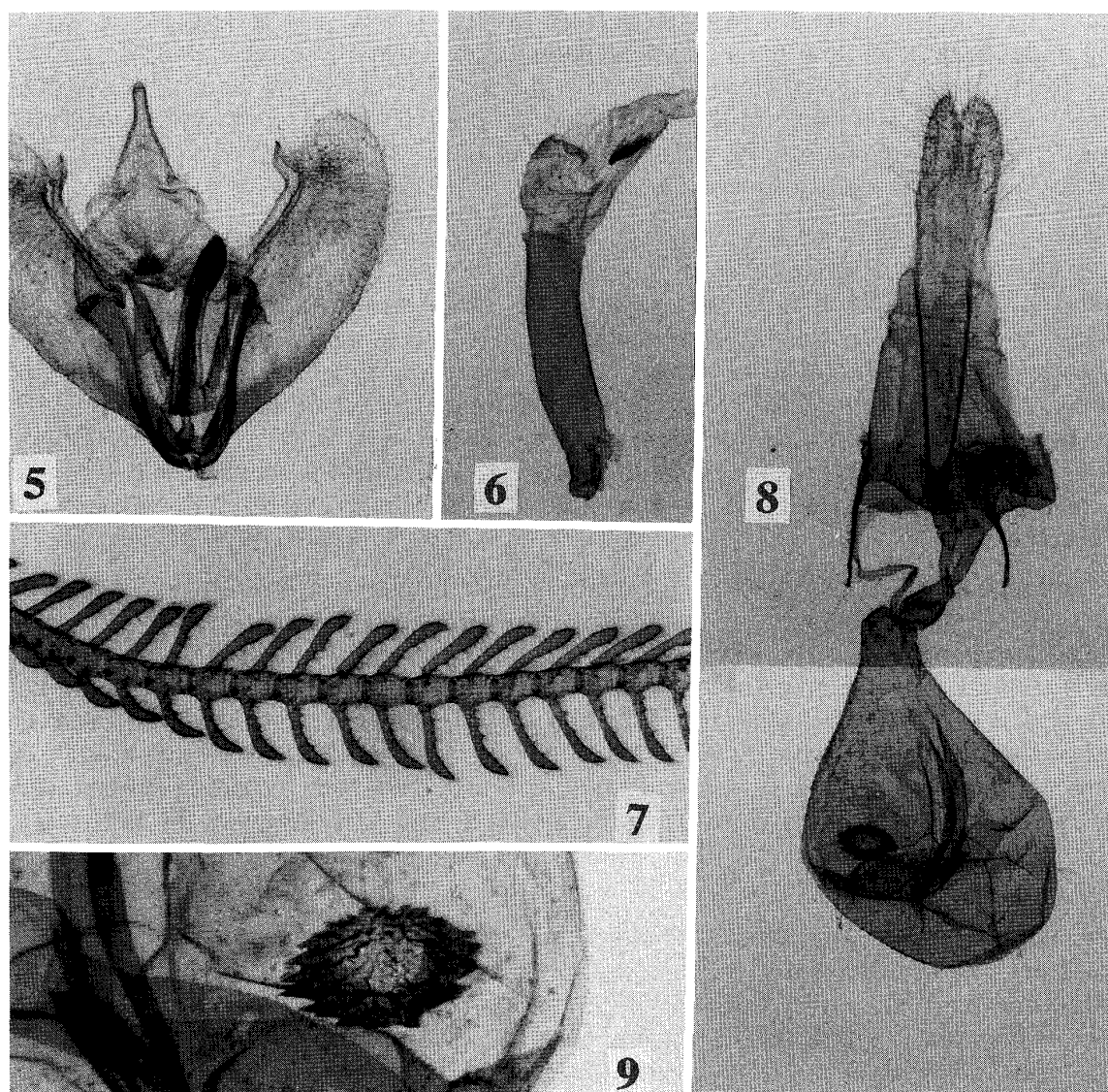
Figs 1-4. *Ourapteryx puncticulosa* sp. n. 1. ♂, paratype. 2. Ditto, underside. 3. ♀, paratype. 4. Ditto, underside.

Male genitalia (Figs 5, 6). Uncus not acutely pointed at apex, setose socii developed. Gnathos slender, with central area slightly expanded, truncate, weakly dentate; valva wide, with rounded apex, costa broadly sclerotized, terminating in a claw-like process. Furca short and stout, rather straight, situated almost centrally, very slightly bent to the right, apex spinulose, large, reaching a little beyond transtilla. Cornuti forming a small hump of about 20 short spines.

Female genitalia (Figs 8, 9). Ostium funnel-shaped, accompanied by strongly sclerotized ante- and postvaginal plates. Colliculum weakly sclerotized, ductus bursae very short, membranous, not fluted. Corpus bursae ovate in ventral view, margin of signum shortly dentate, the anterior margin broader as wide as the central opening. Ovipositor lobes rather long.

Type-material. Holotype, ♂, "Tapaishan im Tsinling, Sued-Shensi (China), F, 23. 7. 1935, H. Höne" (in coll. ZFMK). Paratypes: 17 ♂, type locality, same data as holotype; 1 ♀, same locality, 27. 6. 1935, ZFMK genitalia slide no. 1413 (Inoue fec.); 5 ♂, *id.*, 24. 7. 1935 (including ZFMK genitalia slide no. 1412 (Inoue fec.)); 7 ♂, *id.*, 25. 7. 1935; 2 ♂, *id.*, 26. 7. 1935, 4 ♂; *id.*, 27. 7. 1935. Same locality, but elevation 1,700 m (=L), 1 ♂, 11. 7. 1936, 1 ♂; *id.*, 20. 7. 1935; 2 ♂, *id.*, 21. 7. 1935 (ZFMK genitalia slides no. 1414, 1415), 1 ♂; *id.*, 22. 7. 1935, 1 ♂; *id.*, 24. 7. 1935, 1 ♀, *id.* (ZFMK genitalia slide no. 1416); 2 ♂, *id.*, 25. 7. 1935; 2 ♂, *id.*, 26. 7. 1935; 4 ♂ 1 ♀, *id.*, 28. 7. 1935; 4 ♂, *id.*, 29. 7. 1935; 1 ♂, *id.*, 6. 8. 1936. In coll. ZFMK & in coll. H. Inoue (transferred to BMNH after publication).

The letters "F" and "L" on the original labels have been used by H. Höne as symbols for indicating the elevations of 3,000 m (F) and 1,700 m (L) (Höne, *in litt.*)



Figs 5-9. *Ourapteryx puncticulosa* sp. n. 5. Male genitalia. 6. *Ditto*, aedeagus (vesica everted). 7. Male antenna. 8. Female genitalia. 9. *Ditto* (signum, enlarged).

Distribution. Central China, southern part of the province of Shanxi (=Shensi), Tsinlingshan, approx. 34°N, 107°50'E.

Bionomic note. Nothing is known about the immature stages. Asults have been collected from the end of June until the beginning of August, at altitudes of 1,700 m and 3,000 m.

Taxonomic remarks

This new species exhibits a number of characters not or rarely found in other species of *Ourapteryx*.

1) Bipectinate male antennae. There are two other species presently considered as members of *Ourapteryx* which having the antennae even more strongly bipectinate: *O. maculicaudaria* (Motschulsky, 1866) and *O. nigrociliaris* Leech, 1891, in the latter also the female having the antennae shortly bipectinate. Both species had been treated as

members of separate genera, *Euctenurapteryx* Warren, 1894 and *Energopteryx* Thierry-Mieg, 1903, in the past, but these have been synonymized with *Ourapteryx* by Inoue, 1985 : 111. Holloway, [1994] 1993 : 56, also synonymized *Phrudura* Swinhoe, 1906 with *Ourapteryx*. The two Sumatran species included (*P. pura* Swinhoe, 1902 and *P. leucadelpha* Prout, 1928) have also pectinate antennae (see below). In *Ourapteryx* bipectinate antennae may represent a plesiomorphic character.

2) Absence (or nearly so) of hindwing tails. A group of *Ourapteryx*-species, most of them endemic to Taiwan, including *O. ramosa* (Wileman, 1910), *O. venusta* Inoue, 1985, *O. flavovirens* Inoue, 1985 and *O. variolaria* Inoue, 1985, has the hindwing tails also very weakly developed. In the latter species and in *O. puncticulosa* sp. n. also the typical basal spots close to the tails are absent. This “*ramosa*-group” (including the continental Chinese species *O. adonidaria* Oberthür, 1911 and perhaps *O. kernaria* Oberthür, [1894]) also have a rather punctulate wing-pattern, with more heavily marked underside, agreeing in this character with the new species. *O. kernaria* is transitional to the core-group of *Ourapteryx*, agreeing in the more falcate wing-shape and the well developed tails of hindwing.

The two species formerly treated as members of the genus *Phrudura* cited above are tailless, too. They also have the antennae bipectinate. Furthermore, they differ from typical *Ourapteryx* in some principal characters of the male and female genitalia. At present we are not yet able to decide finally whether *Phrudura* should be retained as a synonym of *Ourapteryx* (following Holloway, [1994] 1993) or better be restored as an independent genus. However, another tailless species, *O. incaudata* Warren, 1897 from Borneo, fits very well with typical *Ourapteryx* in all characters including filiform antennae, excepting for the tails which are completely absent. In this case, the tails are very probably secondarily reduced. The absence or weakness of the tails in the “*ramosa*-group”, including *O. puncticulosa* sp. n. seems, however, to be an ancestral character.

3) Absence of transverse lines. A very typical pattern feature of most species of *Ourapteryx* are two, frequently diverging, lines of the forewings (antemedial and post-medial) and one line, rarely two, of the hindwings which is often strongly bent towards the inner margin. These lines are absent in the new species, and in *O. variolaria* Inoue from Taiwan only traces of the forewing postmedial are visible in males, the sexually dimorphic females totally lack such lines (Inoue, 1989 : 182, fig. 7A). The latter is, therefore, most similar to the new species considering the wing shape and the pattern features (though it has simple antennae).

4) Costa of the valvae terminating in a free process. This character is rather unusual for *Ourapteryx* and considered to be an autapomorphy of *O. puncticulosa* sp. n. Some other species, e. g. *O. clara* Butler, 1880 and *O. claretta* Holloway, 1982, have the apex of costa also slightly projecting, but externally the latter two species are “typical” members of *Ourapteryx*, though their genitalia are largely modified (Inoue, 1985 : 106, figs 58, 98 ; Holloway, 1976, fig. 589 ; *id.*, [1994] 1993 : fig. 80).

5) Weakly developed ductus bursae. Most species of *Ourapteryx* have the ductus bursae at least as long as the corpus bursae, sclerotized and fluted, often bent to one side proximally. In *O. puncticulosa* sp. n., the ductus forms merely as a small appendix of the corpus, not sclerotized and not fluted. This is probably a plesiomorphic character state, resembling in some way the situation in the genus *Tristrophis* Butler, 1883 (Inoue, 1985 : 115, figs 66, 68).

As shown above most of the “unusual” characters of *Ourapteryx puncticulosa* sp. n. are also found in one or a few other species now included in *Ourapteryx*. However, there is no other species with a similar combination of these characters. *O. puncticulosa* sp. n.

probably is the most primitive species of the genus presently known.

Further studies will have to show whether other genera of the tribe Ourapterygini presently still considered independent (*e. g.* *Tristrophis* Butler, *Neuralla* Djakonov, 1936) should also be included in *Ourapteryx*, according to the wider generic definition nowadays accepted by most workers and again widened by the inclusion of *O. puncticulosa* sp. n.

Acknowledgements

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摘 要

中国中部からの *Ourapteryx* 属の新種の記載 (井上寛・D. Stüning)

本文で記載した *O. puncticulosa* という小型の新種は、一般に知られている大部分の同属種とちがって、雄触角が櫛歯状(シロツバメエダシャクなどごく少数に知られている)、後翅外縁が丸く、尾状突起がない(この点ではボルネオの *O. incaudata* Warren に似ているし、台湾から記載された *O. flavovirens* Inoue や *O. variolaria* Inoue では突起がごく弱い)、前翅に2本、後翅に1本の横線が完全に欠け、裏面に灰色点を散布するなど、この属としてはかなり異質的で、むしろ原始的な形態や斑紋をもつ種と考えられる。

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